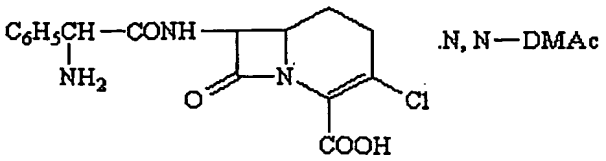
**We Claim:**

1. Mono N,N-Dimethylacetamide monohydrate solvate of loracarbef of Formula II-A.

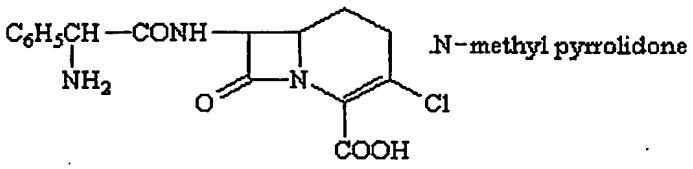



FORMULA - II -A

2. The compound of claim 1 which has the following X-ray diffraction powder pattern:

| d | I/Io |
|---|---|
| 15.6 | 17.0 |
| 11.80 | 100 |
| 11.12 | 41 |
| 7.43 | 25 |
| 5.91 | 12 |
| 5.19 | 14 |
| 4.88 | 16 |
| 4.76 | 22 |
| 4.69 | 17 |
| 4.45 | 13 |
| 4.28 | 13 |
| 3.93 | 70 |
| 3.639 | 28 |
| 3.33 | 18 |
| 3.177 | 71 |
| 2.949 | 18 |
| 2.729 | 13 |
| 2.6122 | 13 |

3. Mono N-Methylpyrrolidone monohydrate solvate of loracarbef of Formula II-B.

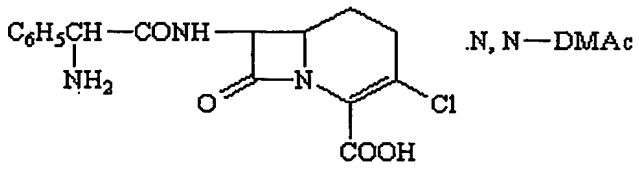



FORMULA - II -B

4. The compound of claim 3 which has the following X-ray diffraction powder pattern:

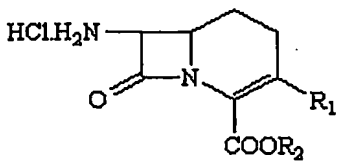
| d | I/Io |
|---|---|
| 15.8248 | 14 |
| 15.2251 | 13 |
| 12.0338 | 100 |
| 8.0954 | 8 |
| 7.5189 | 33 |
| 5.9968 | 13 |
| 5.4668 | 12 |
| 5.3810 | 14 |
| 5.2605 | 18 |
| 4.8863 | 22 |
| 4.7513 | 37 |
| 4.4579 | 21 |
| 4.2997 | 22 |
| 4.1411 | 16 |
| 3.9939 | 55 |
| 3.6421 | 38 |
| 3.3858 | 18 |
| 2.7314 | 15 |

5. A process for the preparation of mono-N, N-dimethylacetamide monohydrate solvate of loracarbef of Formula II-A,




FORMULA - II-A

comprising mixing a compound of Formula III,

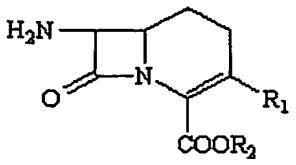



FORMULA - III

wherein $R_1$ is hydrogen, trihalo ($C_1$-$C_4$ alkyl) , $C_1$-$C_4$ alkyl, $C_1$-$C_4$ substituted alkyl, $C_1$-$C_4$ alkoxy, $C_1$-$C_4$ substituted alkoxy, $C_1$-$C_6$ alkylthio, $C_1$-$C_6$ substituted alkylthio, methoxy methyl, carbamoyloxy methyl, acetoxymethyl, $C_2$-$C_6$ alkenyl,

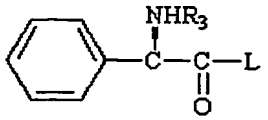
$C_2$-$C_6$ substituted alkenyl, or halogen such as bromo, chloro, fluoro, and iodo; and $R_2$ is a carboxy-protecting group,

with N,N-dimethylacetamide and a base to form a free amine of the compound of formula IV, and



FORMULA - IV

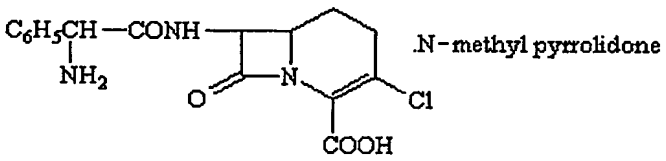
reacting the compound of Formula IV with an acylating agent of Formula V,



FORMULA V

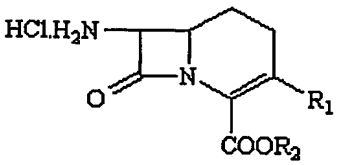
wherein $R_3$ is an amino protecting group and L is a leaving group.

6. A process for the preparation of mono N-methylpyrrolidone monohydrate solvate of loracarbef of Formula II-B,




FORMULA - II-B

comprising mixing a compound of Formula III,

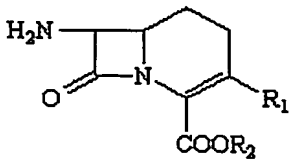


FORMULA - III

wherein $R_1$ is hydrogen, trihalo ($C_1$-$C_4$ alkyl) , $C_1$-$C_4$ alkyl, $C_1$-$C_4$ substituted alkyl, $C_1$-$C_4$ alkoxy, $C_1$-$C_4$ substituted alkoxy, $C_1$-$C_6$ alkylthio, $C_1$-$C_6$ substituted alkylthio, methoxy methyl, carbamoyloxy methyl, acetoxymethyl, $C_2$-$C_6$ alkenyl,

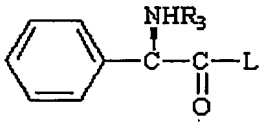
$C_2$-$C_6$ substituted alkenyl, or halogen such as bromo, chloro, fluoro, and iodo; and $R_2$ is a carboxy-protecting group,

with N-methylpyrrolidone and a base, to form a free amine of the compound of formula IV, and



FORMULA - IV

reacting the compound of Formula IV with an acylating agent of Formula V,



FORMULA V

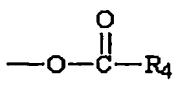
wherein $R_3$ is an amino protecting group and L is a leaving group.

7. The process according to claim 5 or 6, wherein the carboxyl protecting group, $R_2$ is selected from the group consisting of allyl, alkyl, benzyl, substituted benzyl, silyl, halo-substituted alkyl and alkoxyalkyl.

8. The process according to claim 7, wherein the carboxyl protecting group is 4-nitrobenzyl.

9. The process according to claim 5 or 6, wherein the amino-protecting group, $R_3$ is selected from the group consisting of alkoxy-carbonyl, phenoxy-carbonyl, phenoxy-acyl, alkoxy-acyl, aralkoxy-carbonyl, enamino derived from $C_{1-4}$ alkylacetoacetate and acyl.

10. The process according to claim 5 or 6, wherein the leaving group L is compound of Formula VI,



FORMULA VI

wherein $R_4$ is selected from the group consisting of halo such as chloro, bromo, iodo or $C_{1-6}$ alkyl, benzyl, substituted benzyl, phenyl, substituted phenyl, adducts of dicyclohexylcarbodiimide and alkoxyalkyl.

11. The process according to claim 5 or 6, wherein the base is a cyclic amine base containing 0-1 oxygen atom.

12. The process according to claim 11, wherein the cyclic amine base is selected from the group consisting of five- or six- membered tertiary cyclic amines.

13. The process of claim 12, wherein the cyclic amine base is N-methylmorpholine or N-methylpiperazine.

14. A process for the preparation of crystalline monohydrate of loracarbef, the process comprising:

treating mono N,N-dimethylacetamide monohydrate solvate of loracarbef with an acid, and

adjusting the pH with a base to afford the crystalline monohydrate of loracarbef.

15. A process for the preparation of crystalline monohydrate of loracarbef, the process comprising:

treating mono N-methylpyrrolidone monohydrate solvate of loracarbef with an acid, and

adjusting the pH with a base to afford the crystalline monohydrate of loracarbef.

16. The process according to claim 14 or 15, wherein the acid used is a mineral acid or an organic acid.

17. The process according to claim 16, wherein the acid is hydrochloric acid.

18. The process according to claim 14 or 15, wherein the base used is ammonia.

19. Crystalline monohydrate of loracarbef having a bulk density greater than or equal to 0.6 g/ml.

20. A pharmaceutical composition comprising:

a therapeutically effective amount of a crystalline monohydrate of loracarbef having a bulk density greater than or equal to 0.6 g/ml;

and one or more pharmaceutically acceptable carriers, excipients or diluents.